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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,672	06/18/2001	Takeshi Kurihayashi	2001_0771	7635

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EXAMINER

NORRIS, JEREMY C

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/881,672

Applicant(s)

KURIBAYASHI ET AL.

Examiner

Jeremy C. Norris

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- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-47 is/are pending in the application.
- 4a) Of the above claim(s) 37-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-30 and 33-36 is/are rejected.
- 7) ☒ Claim(s) 31 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 July 2003 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 26-30, 34 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by US 5,637,919 (hereafter Grabbe).

Grabbe discloses, referring to figures 1 and 2, an electronic component (10) to be mounted on a printed board (16), said electronic component comprising: and electrical connecting surface (44a); a plurality of electrical connecting portions (20) provided on said electrical connecting surface in arrangement positions; and at least one reference mark (48, 46) located on a surface of the electrical component and serving as a reference for the arrangement positions of said electrical connecting portions [claims 26, 34], wherein said at least one reference mark comprises a pair of reference marks positioned symmetrically with respect to a center point of said electrical connecting surface, wherein said electrical connecting portions are disposed in an array that surrounds said reference marks [claim 27], wherein said reference marks are located in a central portion of said electrical connecting surface, and said electrical connecting portions are disposed around said reference marks [claim 28], wherein said reference mark is provided on a side of said electrical connecting surface (44a) that is adapted to confront a mounting portion of the printed board [claim 29], wherein said reference mark comprises a projection [claim 30], wherein said electrical connecting portions are lands (56) [claim 36].

Furthermore, regarding claim 34, the limitation that the recognition mark be formed "simultaneously with said electrical connecting portions" is a method limitation in a product claim. As such, it is only considered to the extent that said method limitation impacts the structure of the device. Moreover, it has been held the presence of process limitations on product claims, which product does not otherwise patentably

distinguish over prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965).

Claims 26-28, 33, and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by US 5,644,102 (hereafter Rostoker).

Rostoker discloses, referring to figures 2 through 6, an electronic component (202) to be mounted on a printed board (16), said electronic component comprising: and electrical connecting surface; a plurality of electrical connecting portions (212) provided on said electrical connecting surface in arrangement positions; and at least one recognition mark (230) located on a surface of the electrical component and serving as a reference for the arrangement positions of said electrical connecting portions (see col. 4, lines 45-50) [claim 26], wherein said at least one recognition mark comprises a pair of recognition marks (430b, 434b; figure 4b) positioned symmetrically with respect to a center point of said electrical connecting surface, wherein said electrical connecting portions are disposed in an array that surrounds said recognition marks [claim 27], wherein said recognition marks are located in a central portion of said electrical connecting surface, and said electrical connecting portions are disposed around said recognition marks (see figure 4b) [claim 28], wherein said recognition mark is located in a corner portion of an opposite side of the electronic component relative to said electrical connecting portions (see figure 3a) [claim 33], wherein said electrical connecting portions are solder bumps (see col. 7, lines 1-5) [claim 35].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rostoker, in view of US 5,467,253 (hereafter Heckman).

Rostoker discloses the claimed invention as described above with respect to claim 26 except Rostoker does not specifically state that the electrical portions are lands. However, it is well known in the art that land grid arrays and ball grid arrays are interchangeable as evidenced by Heckman (see col. 4, lines 15-20). Therefore, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to use a land grid array in place of the ball grid array in the invention of Rostoker as is well known in the art and evidenced by Heckman. The motivation for doing so would have

been to avoid the need for a lead based solder and thus create a more environmentally friendly device.

Allowable Subject Matter

Claims 31 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 31 states the limitation "wherein said recognition mark includes coded information indicative of said electronic component". This limitation, in conjunction with the other claimed limitations, especially the limitation that "said recognition mark is provided on a side of said electrical connecting surface that is adapted to confront a mounting position of the printed board" was neither found to be disclosed in, nor suggested by the prior art.

The indicated allowability of claims 33-36 is withdrawn in view of the newly discovered reference(s). Rejections based on the newly cited reference(s) are stated above.

Response to Arguments

Applicant's arguments filed 12 August 2003 have been fully considered but they are not persuasive. Applicants contend that the cited prior art of US 5,637,919 (hereafter Grabbe) fails to anticipate the rejected claims because Grabbe lacks a "recognition mark which serves as a reference for the arrangement positions of the electrical connecting portions". However, as Applicants correctly state, the projections

on the chip of Grabbe are arranged so as to be aligned with contacts on a circuit board when, and only when, the projections are matched with the corresponding depressions on the circuit board. This is the very function of a recognition mark. Once the position of the projections is known, the electrical connecting portions are also known. Thus the projection is indeed a "recognition mark which serves as a reference for the arrangement positions of the electrical connecting portions". Therefore, Applicants' traversal on these grounds is deemed unsuccessful.

Additionally, Applicants offer, regarding the invention of Grabbe that "since the component is positioned and mechanically regulated on the board by a mechanical mechanism, the positioning accuracy becomes rough so that it is difficult to meet a recently required accuracy in a case where the pitch between the electrodes is on the order of 0.3 mm or less. In addition, when the positions of the recesses are shifted, the component will be mounted at the shifted position, and thus the recess cannot serve as a reference for the electrical connecting portions". However, it is noted that the features upon which applicant relies upon above are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Tuesday - Friday, 10am - 7pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-308-0725.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JCSN

David A. Zanele
David A. Zanele
Primary Examiner
11/26/13